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EXAMINER

PHAM, HOAI V

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/777,688

Applicant(s)

HUSCHKA ET AL.

Examiner

Hoai v. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 21-50 is/are pending in the application.
- 4a) Of the above claim(s) 22-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21 and 28-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/185,148.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/2/04;3/3/05
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of species II, claims 21, 28-50 in the reply filed on August 29, 2005 is acknowledged.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claims 28-50 (for example: first and second dies, first and second circuitry) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

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Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 21 and 28-50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 21, the phrase "at least one semiconductor die having a bottom surface attached to said first and second die attach paddles" is not enabled since claims 28-29 recite a first and a second semiconductor dies are electrically connected to the respective die attach paddles.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 21, 28-32, 35, 37-42, 44-46 and 48, insofar clear, are rejected under 35 U.S.C. 102(e) as being anticipated by Weiblen et al. [U.S. Pat. 6,528,868].

With respect to claims 21 and 28-30, Weiblen et al. (fig. 5, cols. 3-4) discloses a semiconductor device, comprising:

a first die attach paddle (150' ") made of an electrically conductive material;

a second die attach paddle (150'' ") made of an electrically conductive material;

and

a first semiconductor die (200) having a first bottom surface attached to said first die attach paddle (150' ") and second semiconductor die (201) having a second bottom surface attached to said second die attach paddle (150'' ") die attach paddles;

wherein the first and second die attach paddles are electrically separated from each other.

With respect to claim 31, Weiblen et al. (fig. 5, col. 4, lines 1-4) discloses that the first semiconductor die (200) is arranged for processing analog signals, and the second semiconductor die (201) is arranged for processing digital signals.

With respect to claim 32, Weiblen et al. (fig. 5) discloses that the first and second die attach paddles (150' " and 150" ") are shaped corresponding to the shapes of the first and second parts of the bottom surface, respectively.

With respect to claims 30 and 34, the limitation "first and second die attach paddles are connected to provide ground contacts for analog and digital signals, respectively" simply specifies an intended use or field of use and is not given patentable weight. It is noted that, the intended use in this device claim does not result in a structure difference between the claim invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior structure is capable of performing the intended use, then it meets the claim. *Ex parte Masham, 2 USPQ2d 1647 (1987)*.

With respect to claim 37, Weiblen et al. (fig. 5) discloses that a plurality of leads (20) for, when electrically connected to the first and second die semiconductor die (200, 201), providing electrical contacts to the first and second die semiconductor die (200, 201), said plurality of leads being held together thereby forming a lead frame.

With respect to claim 38, Weiblen et al. (fig. 5) discloses that said first and second semiconductor die (200, 201) attach paddles (150' ", 150" ") are fixed to said lead frame.

With respect to claim 39, Weiblen et al. (fig. 5) discloses that at least one of said first and second die attach paddles (150' ", 150" ") is fixed to a paddle lead on a corner of said lead frame.

With respect to claim 40, Weiblen et al. (fig. 5) discloses that the at least one die attach paddle (150' ", 150" ") is further fixed to a second paddle lead on another corner of said lead frame (20).

With respect to claim 41, Weiblen et al. (fig. 5) discloses that the at least one die attach paddle (150' ", 150" ") is further fixed to at least one of said plurality of leads (20).

With respect to claim 42, Weiblen et al. (fig. 5) discloses that the at least one of said first and second die attach paddles (150' ", 150" ") has a three point connection to said lead frame (20).

With respect to claim 44, Weiblen et al. (fig. 5) discloses that a plurality of leads (20) for, when electrically connected to the first and second semiconductor die (200, 201), providing electrical contacts to the first and second semiconductor die (200, 201), wherein at least one of said first and second die attach paddles (150' ", 150" ") is fixed to one of said plurality of leads (20).

With respect to claim 45, Weiblen et al. (fig. 5) discloses that the plurality of leads (20) are arranged in the package to substantially form a rectangle, and said one of said plurality of leads is located near the center of one side of said rectangle.

With respect to claim 46, Weiblen et al. (fig. 5) discloses that the at least one of said first and second die attach paddles (150' ", 150" ") is further fixed to another one of said plurality of leads; said another one of said plurality of leads is located adjacent to said one of said plurality of leads; and said one and said another one of said plurality of leads form a multiple common lead.

With respect to claim 48, Weiblen et al. (fig. 5) discloses that the first and second die attach paddles (150' ", 150" ") each have a substantially rectangular shape.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein



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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weiblen et al. [U.S. Pat. 6,528,868] in view of Applicant Admitted Prior Art (fig. 2, page 3).

Weiblen et al. (fig. 5) substantially discloses all the limitation as claimed above except the first and second die attach paddles are exposed on the bottom surface of the semiconductor device package. However, Applicant Admitted Prior Art discloses that the die attach paddle (200) are exposed on the bottom surface of the semiconductor device package. Therefore, it would have been obvious to one having skill in the art at the time the invention was made to have the first and second die attach paddles are exposed on the bottom surface of the semiconductor device package of Weiblen et al. because as taught by Applicant Admitted Prior Art, the die attach paddle are exposed the bottom surface of the semiconductor device package to provide an efficient heat path.

11. Claims 43, 47 and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiblen et al. [U.S. Pat. 6,528,868].

With respect to claim 43, Weiblen et al. (fig. 5) discloses only three point connection to the lead frame. Weiblen et al. (fig. 5) fails to show the at least one of said

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first and second die attach paddles is fixed to said lead frame at multiple connection points, the number of connection points being greater than four. However, it would have been obvious to the skilled in the art to have multiple connection points since it has been held that mere duplication of the essential working parts of the device involves only routine skill in the art. See *St. Regis Paper Co. V. Bemis Co.*, 193 USPQ 8. Therefore, it would have been obvious to the skilled in the art to have multiple connection points, the number of connection points being greater than four in order to secure the at least one of said first and second die attach paddles fixed to said lead frame.

With respect to claims 47 and 49-50, Weiblen et al. (fig. 5) does not explicitly disclose the exact size and spatial distance as claimed by Applicant. However, the size and spatial distance would have been obvious to an ordinary artisan practicing the invention because, absent evidence of disclosure of criticality for the range giving unexpected results, it is not inventive to discover optimal or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955). Furthermore, the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. See *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai v. Pham whose telephone number is 571-272-1715. The examiner can normally be reached on M-F.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**HOAI PHAM  
PRIMARY EXAMINER**